



AEC-NASA TECH BRIEF



AEC-NASA Tech Briefs describe innovations resulting from the research and development program of the U.S. AEC or from AEC-NASA interagency efforts. They are issued to encourage commercial application. Tech Briefs are published by NASA and may be purchased, at 15 cents each, from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Hastelloy X Properties, Data, and Metallurgical Characteristics

A literature survey and testing program were initiated to obtain pertinent information for Hastelloy X through the temperature range of -423° to 1800° F. Hastelloy X is a nickel-base alloy with exceptionally good corrosion and oxidation resistance at temperatures to 2100° F, superior strength, good resistance to a radiation environment, good fabricative qualities, and good notch-toughness.

A report has been prepared which includes the tensile properties of Hastelloy X forgings, strip, weldments, and brazements. This information is presented as individual test data and as statistical means. The mechanical properties of shear strength, bearing strength, low-cycle fatigue, and thermal cycling are also presented. In addition, the manufacturing and fabrication processes are presented from raw material melting through fabrication of individual hardware components. Metallurgical analysis of thermal treatments and processing are also provided, as are specific data on large heavy-wall forgings and thin strip.

Note:

Copies of the report, *Phoebus-2 Materials Final Report*, RP-SR-0002, Aerojet-General Corporation, September 1967, are available from:

Technology Utilization Officer
AEC-NASA Space Nuclear
Propulsion Office
U.S. Atomic Energy Commission
Washington, D.C. 20545
Reference: B68-10023

Patent status:

No patent action is contemplated by AEC or NASA.

Source: L. F. Glasier, Jr.
of Aerojet-General Corporation
under contract to
AEC-NASA Space Nuclear Propulsion Office
(NUC-10302)

Category 03